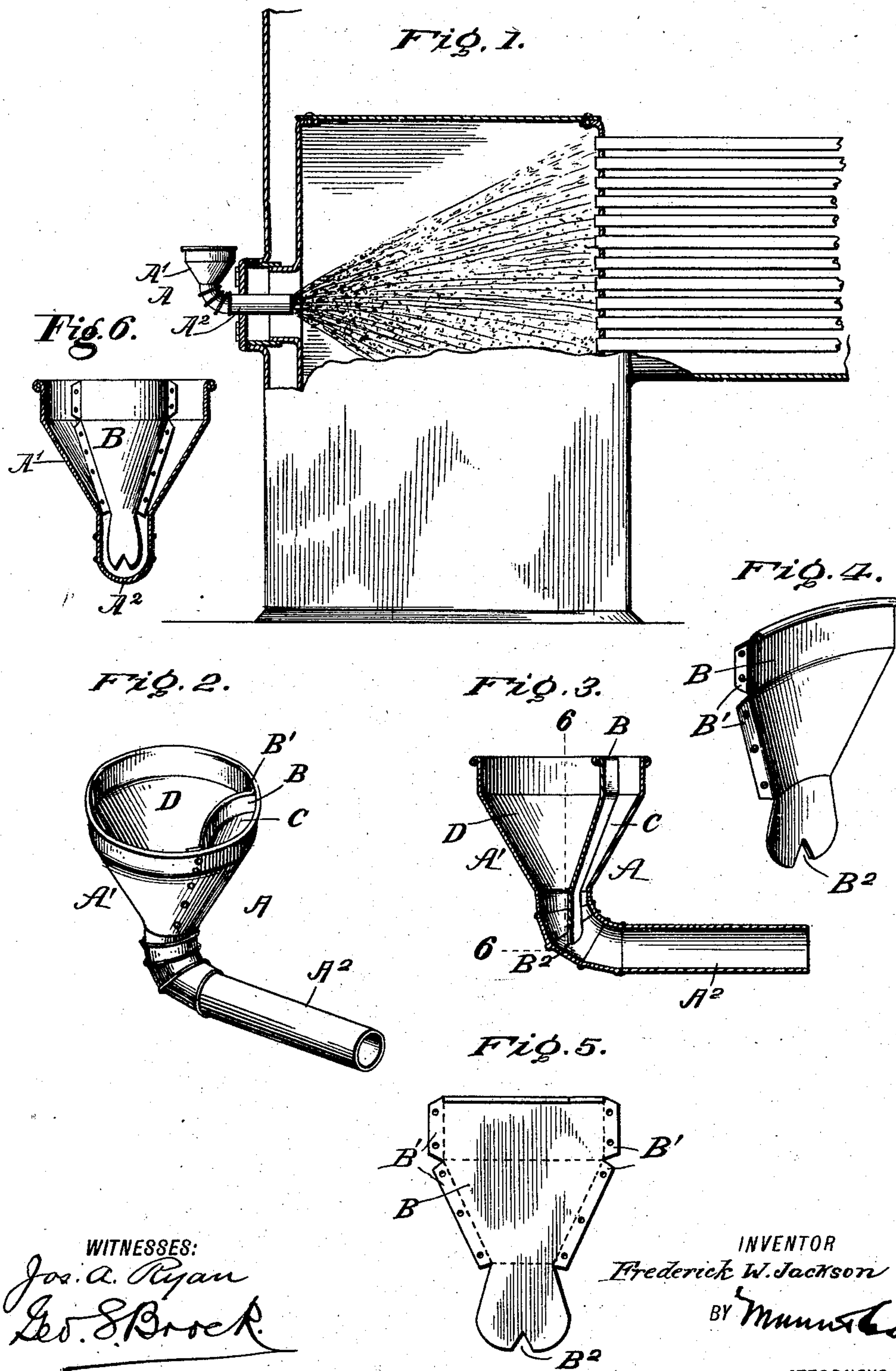


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F. W. JACKSON.
BOILER FLUE CLEANER.
APPLICATION FILED NOV. 28, 1904.



WITNESSES:

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FREDERICK WILLIAM JACKSON, OF NEEDLES, CALIFORNIA.

BOILER-FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 782,608, dated February 14, 1905.

Application filed November 28, 1904. Serial No. 234,548.

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM JACKSON, a citizen of the United States, residing at Needles, in the county of San Bernardino and State of California, have invented a new and useful Improvement in Boiler-Flue Cleaners, of which the following is a specification.

My invention relates to an improvement in cleaners for boiler-flues which while susceptible of general use in connection with boiler-flues is particularly applicable in oil-burning locomotives. Cleaners of this type and in general use are usually funnel-shaped and made about nine inches in diameter at the top and taper down to an elbow, as shown in Figure 1. They then extend horizontally in length about twenty-four inches, having about a three-inch opening at the end, and are generally made of medium-heavy galvanized iron. Now in these funnels in general use the sand frequently goes all in a lump, and when the exhaust from the engine is light a large part of the sand falls down in front of the oil-burner, which are generally set very low, and this sand immediately forms into heavy carbon.

It is the object of my invention to overcome these objections; and to these ends it consists in feeding and mixing atmospheric air with the sand as it is drawn from the funnel.

It consists, further, in locating a partition within the funnel to prevent a too rapid flow of the sand.

It consists, further, in certain peculiar features of construction, operation, and combination of parts, as will be hereinafter fully described, and pointed out in the claims, reference being had to the accompanying drawings, in which—

Fig. 1 is a vertical section of a locomotive-boiler, showing my improvement as in use. Fig. 2 is a perspective view of the device removed from the boiler fire-box. Fig. 3 is a central vertical section of the same. Fig. 4 is a perspective view of the partition-plate removed from the funnel. Fig. 5 shows the shape of the blank from which the partition is formed. Fig. 6 is a vertical section on line 6 6 of Fig. 3.

A represents a funnel embodying my improvement and consists of the vertical portion A' and the horizontal portion A² and is made of galvanized iron.

B represents a partition, also made of galvanized iron, it being originally made flat and of the shape shown in Fig. 5. It is then pressed to the shape shown in Fig. 4 and placed within the funnel proper, A', and secured thereto by means of rivets passed through the flanges B'. The lower portion of this partition, it will be noticed, is rounded to fit within the elbow connecting the horizontal portion A² with the funnel and has the notch B², as shown in Fig. 4. The lower portion of this partition, however, does not fit closely within the part A² of the funnel, a space being left on each side and at the bottom between said partition and the funnel.

A very important feature of my invention is to admit atmospheric air and sand at the same time.

My improved device is inserted through the center of the fire-door of a boiler-furnace, and the funnel which is divided into two compartments or chambers C and D by the partition B has the compartment D filled with sand. The sand may be packed down solid, either dry or wet sand being used. If wet sand is used, it may be necessary to slightly jar or shake the funnel to get the sand running; but this will not be necessary when dry sand is used. The compartment or chamber C is for the admission of atmospheric air to the sand where the sand passes under the partition and through the notch B² in the lower end of said partition B and at which point the sand and the atmospheric air become thoroughly mixed by virtue of the draft from the engine-exhaust or a blower, causing a strong downdraft of atmospheric air. The mixed air and sand is drawn out of the horizontal tube A² in the form of a spray into the fire-box, all the flues getting full and equal benefit of the sand-blast. When the funnel is about one-half full or even more or less so, whether the sand be dry or wet the sand will be properly fed out without recourse to any jarring or shaking of the funnel. On account of the even flow of the sand in my de-

vice all of the flues get an even quantity of the said blast, and the operation of the device is not dependent upon the skill of the fireman.

It will thus be seen that I provide a simple, cheap, and efficient device of the character described and which can use either wet or dry sand with facility.

By the use of my device the life and usefulness of the tubes and fire-box will be greatly prolonged.

By having the bottom partition set a short distance above the bottom of the elbow the flow of the sand will be regulated at all times, and the notch or opening B² is to permit small rocks to pass through and not clog up the space at the bottom.

When the device is not in use, it is to be taken from the opening in the fire-door and put in any suitable place, as if left in the fire-door the horizontal portion would soon become burned off.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. A cleaner for boiler-flues consisting of a funnel having a horizontally-disposed discharge-opening at its lower end, and a vertical partition within said funnel dividing the same into two chambers, said chambers communicating with each other adjacent to the discharge-opening of the funnel.

2. A cleaner for boiler-flues consisting of a funnel adapted to be located exteriorly of the front wall of the fire-box, a discharge-tube leading from the funnel into the fire-box, and a partition within said funnel dividing it into two chambers, one of which is for sand and the other for atmospheric air, said partition having an opening at its lower end establishing communication between the sand and air chambers, whereby the sand and air will be mixed and discharged as a spray to the flues by a draft within the fire-box of the boiler.

3. A cleaner for boiler-flues consisting of a funnel located exteriorly of the front wall of the fire-box, a discharge-tube leading from the funnel and adapted to pass through the fire-door and into the fire-box, a partition within the funnel dividing the funnel into two chambers one of which being for sand and the other

for atmospheric air, said partition having a passage at its lower end connecting the two chambers and said partition being inclined rearwardly a portion of its length and then extending downwardly vertically to the discharge-tube.

4. A cleaner for boiler-flues consisting of an upright funnel and horizontal discharge communicating with the funnel at its lower end, and a partition secured within the funnel dividing the same into two chambers, one for sand and the other for atmospheric air, said partition having an opening at its lower end establishing communication between the aforesaid chambers.

5. A cleaner for boiler-flues consisting of an upright funnel, a horizontal discharge-tube communicating with the funnel at its lower end, and a partition secured within the funnel dividing it into two chambers, said partition having a rearward slant and curved longitudinally, and provided with an opening at its lower end establishing communication between the aforesaid chambers.

6. A cleaner for boiler-flues consisting of a funnel adapted to be located exteriorly of the front wall of the fire-box, a discharge-tube leading from the funnel into the fire-box, and a partition within the funnel dividing it into two compartments, said partition extending downwardly into the funnel and having its lower end reduced in transverse area, whereby a space will be left between the lower end of the partition and the side walls of the discharge-tube.

7. A cleaner for boiler-flues consisting of an upright funnel, and a discharge-tube extending at an angle therefrom, and a partition located within the funnel and dividing the same into two chambers, said partition having a notch at its lower end and set off from the side walls of the funnel whereby a space will be formed around the lower end of the partition to permit free passage of sand to the discharge-pipe.

FREDERICK WILLIAM JACKSON.

Witnesses:

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